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Filing Date: October 11, 2001

Title: AGRICULTURAL BAGGER WITH UPPER TUNNEL COMPACTION AND CHUTE AGITATION

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**Clean copy of the claims**

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1. [Amended Once] The apparatus of claim 19, further comprising:  
a first motor coupled to the sloping wall of the input hopper; and  
a first distribution mechanism driven by the first motor and located inside the hopper to move the agricultural feed adjacent to the sloping wall in order to prevent feed bridging before the primary compression mechanism, the distribution mechanism powered by the first motor.
  2. The apparatus of claim 1, wherein the first motor is a rotary motor and wherein the distribution mechanism further comprises an elongated first bar attached along its length to the first motor such that the first motor sweeps the first bar in a curvical motion along the sloping wall.
  3. The apparatus of claim 2, wherein a leading edge of the first bar forms a non-parallel angle relative to a radius of rotation of the first bar.
  4. The apparatus of claim 2, further comprising:  
a second motor coupled to the sloping wall of the input hopper; and  
an elongated second bar attached along its length to the second motor such that the second motor sweeps the second bar in a curvical motion along the sloping wall.
  5. The apparatus of claim 4, wherein the distribution mechanism further comprises:

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a third bar hingedly connected to a wall of the hopper;  
a fourth bar hingedly connected to the third bar and hingedly connected to the first bar near an end distal to its connection to the first motor.  
a fifth bar hingedly connected to a wall of the hopper;  
a sixth bar hingedly connected to the fifth bar and hingedly connected to the second bar near an end distal to its connection to the second motor.

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6. The apparatus of claim 5, wherein the fourth bar rotates substantially in a plane, is substantially flat in the plane of its rotation, and has an end segment having a leading edge that forms a non-parallel angle relative a radius of its rotation.

7. The apparatus of claim 5, further comprising a cover attached to the hopper that covers an upper portion of the distribution mechanism to prevent the feed from binding from one or more of the connections.

8. The apparatus of claim 1, further comprising  
a tunnel having an internal cavity, and connected to the primary compression mechanism to receive the feed output from the primary compression mechanism and operable to extrude the feed into the bag deployed from around the tunnel.  
a secondary compression mechanism located above the primary compression mechanism and connected to the tunnel to displace pressure from above the primary compression mechanism and toward an upper portion of the tunnel cavity.

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19. An agricultural bagger apparatus for compacting feed into a horizontally deployed bag, the apparatus comprising:

- a primary compression mechanism;
- an input hopper that receives agricultural feed, the hopper having a sloping wall and a lower end exit chute located to transfer the agricultural feed into the primary compression mechanism;
- a tunnel having an internal cavity, and connected to the primary compression mechanism to receive the feed output from the primary compression mechanism and operable to extrude the feed into the bag deployed from around the tunnel; and
- a secondary compression mechanism located above the primary compression mechanism and connected to the tunnel to displace pressure from above the primary compression mechanism and toward an upper portion of the tunnel cavity.

20. [Amended Once] The apparatus of claim 19, wherein the secondary compression mechanism is located on the exterior of the feed tunnel and extending into the feed tunnel above the primary compression mechanism.

21. [Amended Once] The apparatus of claim 19, wherein the secondary compression mechanism includes one or more motorized pistons.

22. [Amended Once] The apparatus of claim 21, wherein the secondary compression mechanism includes a hinged apparatus on one side of the feed tunnel wall and connected to the piston arm.

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23. [Amended Once] The apparatus of claim 22, wherein the secondary compression mechanism includes a hinged apparatus that protrudes outward of the feed tunnel wall at the non-compacting stage and extending inward into the feed tunnel at the compacting stage above the primary compression mechanism.

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24. [Amended Once] The apparatus of claim 19, wherein the secondary compression mechanism compacts the feed above the primary compression mechanism by adding pressure to the feed.

25. A method for filling a feed bag connected to a feed tunnel, the method comprising:

compacting feed into a central portion of the tunnel; and  
exerting additional compaction from the central portion of the tunnel towards an upper portion of the tunnel.

26. The method of claim 25 wherein the displacing pressure further comprises extending a piston into the feed in the tunnel above the central compacted feed.

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27. [Amended Once] The apparatus of claim 37, further comprising:  
means for displacing pressure along the sloping wall toward the primary compression mechanism in order for the feed to easily fall through the hopper to the primary compression mechanism.

28. The apparatus of claim 27, wherein the means for displacing pressure includes means for sweeping the feed along the sloping wall in a curvical motion.

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29. The apparatus of claim 27, further comprising means for agitating the feed at a circumference of the curvical motion at a distance from the sloping wall in order for the feed to easily fall through the hopper to the primary compression mechanism.
30. The apparatus of claim 29, wherein the means for displacing pressure further comprises means for sweeping the feed along the sloping wall in a first curvical motion and in a second separated curvical motion, both along the sloping wall.
31. The apparatus of claim 27, wherein the means for displacing pressure further comprises means for sweeping the feed along the sloping wall in two separated curvical motions along the sloping wall.
32. The apparatus of claim 31, further comprising means for agitating the feed at a circumference of the two curvical motions and at a distance from the sloping wall in order for the feed to easily fall through the hopper to the primary compression mechanism.
33. The apparatus of claim 32, further comprising means for directing the feed beyond an upper portion of the curvical motion in order that the feed is primarily swept at a lower portion of the curvical motions.
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34. The apparatus of claim 27, wherein the means for displacing pressure further comprises means for sweeping the feed along the sloping wall in a curvical motion along the sloping wall.

35. The apparatus of claim 34, further comprising means for agitating the feed at a circumference of the curvical motion and at a distance from the sloping wall in order for the feed to easily fall through the hopper to the primary compression mechanism.

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37. [New] An apparatus for improving the flow of agricultural feed in an agricultural feed stock bagging machine, the apparatus comprising:

a tunnel for deploying a bag and for receiving compressed feed to extrude into the bag;  
a primary compression mechanism fed by a hopper with a sloping wall; and  
means for displacing pressure within the tunnel from above the primary compression mechanism to a higher portion of the tunnel interior.

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